



# Advisory Circular

**Subject: Grandfathering at Airports Pursuant to Canadian Aviation Regulation (CAR) 302.07**

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## 1.0 INTRODUCTION

- (1) This Advisory Circular (AC) is provided for information and guidance purposes. It describes an example of an acceptable means, but not the only means, of demonstrating compliance with regulations and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.

### 1.1 Purpose

- (1) The purpose of this document is to provide guidance and examples of when changes/works at an airport requires adherence to the latest standards as referenced in *Canadian Aviation Regulation (CAR) 302.07*.

### 1.2 Applicability

- (1) This document applies to all Canadian airport operators, manufacturers, suppliers, Transport Canada Civil Aviation (TCCA) Headquarters and regional personnel, and the aviation industry involved with the planning, design, and maintenance activities at Canadian aerodromes.

### 1.3 Description of Changes

- (1) Not applicable.

## 2.0 REFERENCES AND REQUIREMENTS

### 2.1 Reference Documents

- (1) It is intended that the following reference materials be used in conjunction with this document:
  - (a) *Aeronautics Act* (R.S., 1985, c. A-2);
  - (b) Part III, Subpart 2 of the *Canadian Aviation Regulations (CARs) — Airports*;
  - (c) Transport Canada Publication, TP 312 — *Aerodrome Standards and Recommended Practices*.

### 2.2 Cancelled Documents

- (1) Not applicable.
- (2) By default, it is understood that the publication of a new issue of a document automatically renders any earlier issues of the same document null and void.

### 2.3 Definitions and Abbreviations

- (1) The following **definitions** are used in this document:
  - (a) **Fixed By Function NAVAID.** An air navigation aid (NAVAID) that must be positioned in a particular location in order to provide an essential benefit for civil aviation is fixed by function. Exceptions are:
    - (i) Equipment shelters, junction boxes, transformers, and other appurtenances that support a fixed by function NAVAID *are not* fixed by function unless operational requirements require them to be located in close proximity to the NAVAID.
    - (ii) Some NAVAIDs, such as non-directional beacons or localizers, can provide beneficial performance to civil aviation even when they are not located at their optimal location. These NAVAIDS *are not* fixed by function. (*NAVAID fixe de par sa fonction*).

- (2) The following **abbreviations** are used in this document:
- (a) **AOM**: Airport Operations Manual
  - (b) **CAR**: Canadian Aviation Regulation
  - (c) **TODA**: Take-Off Distance Available

### **3.0 BACKGROUND**

- (1) An airport is a large piece of infrastructure that requires maintenance on an ongoing or periodic basis to keep its various parts (runway, taxiway, apron, visual aids, etc) and systems in compliance with the regulatory requirements applicable at the time the part or system was initially certified.
- (2) Depending on the date of initial certification of the various parts and systems at the airport, it is common to have standards from earlier editions of TP 312, as well as the current edition, in force at the same time at the airport. To facilitate the identification of these earlier installations and the standards applicable to them, it is important that the parts and systems subject to earlier editions of TP 312 be clearly identified in the Airport Operations Manual (AOM) together with the applicable TP 312 edition and amendment number.
- (3) CAR 302.07 allows airport operators to maintain compliance to the standards applicable to the airport, or part thereof, at the time of initial certification until such a time that a change is implemented “...*in respect of any part or facility of the airport that has been replaced or improved...*”. In these situations the airport operator must adhere to the latest standards “...*as they read on the date on which the part or facility was returned to service...*”.

CAR 302.07, commonly referred to as the “grandfather clause”, provides a mechanism that allows airports to transition to the latest standards in an efficient manner by incorporating these into the planning of future works/changes at the airport. This grandfathering concept is also utilized in other areas of Canadian law, such as with the electrical, building and fire codes.

- (4) Compliance with the latest standards as they read on the date which the part or facility was returned to service would be required when;
- (a) any part of the airport is being “*replaced or improved*” such as the reconstruction of a taxiway or runway, associated areas, or replacement of signage;
  - (b) any facility of the airport is being “*replaced or improved*” such as the replacement of the edge lighting or approach lighting systems;
  - (c) any part of the facility is being “*replaced or improved*” by a change to the operational level of service such as with lower operational visibilities, change to critical aircraft size, or runway status change (e.g. upgrade from Non-precision to Precision).

In the case of a runway or taxiway being reconstructed as a whole to the same operational dimensions (length and width), the adherence to the latest standards would be for the surface slopes and markings.

### **4.0 AIRPORT CHANGES / ACTIVITIES SUBJECT TO CANADIAN AVIATION REGULATION (CAR) 302.07**

- (1) The following listing provides examples of airport changes or activities that may be considered “maintenance activities” where the standards in effect at the time of certification could be maintained. It also identifies conditions where the airport operator would be required to comply with the latest standards in effect.
- (a) Repaving, regravelling, including localized works/repairs to the base and sub-base.

- (i) These works are typically done to restore the surface characteristics of the runway, such as friction or drainage issues. It is common for these activities to go into the base and sub-base to address underlying issues that result in degradation of the surface such as cracking, or frost heaving. Under TP 312 4<sup>th</sup> edition, insofar that the restored surface is of the same operational dimensions (Code number and width) and level of service as initially certified, the above examples are considered maintenance activities. In this case, the only element that requires compliance to the latest standards on the date on which the runway or taxiway is returned to service, is the surface markings.
- (ii) However, where the works are being done in conjunction with a change to the “critical aircraft” intended to use the surface, the airport operator must adhere to the latest standards on the date on which the runway or taxiway is returned to service, including those related to the runway surface slopes, since these relate to aircraft handling and performance.
- (b) Repainting of the surface markings.
  - (i) These works are considered maintenance activities done to restore the visual condition of the markings by application of fresh paint atop of the existing faded/worn markings.
  - (ii) However, where the painting of the markings requires the mapping of the marking locations, e.g. after a pavement overlay or extension, the airport operator must adhere to the latest marking standards on the date which the affected runway, taxiway or apron is returned to service.
- (c) Edge lighting cabling (in duct), fixture, filter, lamp replacement.
  - (i) These works are typically done to restore/maintain the performance characteristics of the lighting systems. Also included as a maintenance activity is the replacement of weakened/damaged pulpits or sections of ducting/direct burial wiring.
  - (ii) However, where extensive trenching is required to complete the works to the lighting system or where the works are associated with a change to the operational “level of service” (e.g. upgrade from Non-precision to Precision, or for lower operating visibilities) the airport operator must adhere to the latest standards on the date which the runway, taxiway or apron is returned to service for the lighting system under construction, including those related to light location.
  - (iii) Although CAR 302.07 allows for the colour coding of the displaced runway areas, and last thirds of runways greater than 1 200 metres to remain as initially certified, TP 312 5<sup>th</sup> edition changes the colour coding from blue to red for displaced runway areas and white to yellow for the last third of runways greater than 1 200 metres. This is to standardize with international colour coding which provides additional visual cues to aircrews of the runway operational environment. Therefore consideration should be given to implement these changes.
- (d) Signage replacement.
  - (i) Insofar that there is no change to the operational level of service associated, critical aircraft or operational visibility, this maintenance activity is typically done to restore the performance characteristics (colour or light output) of the signage. A common method to complete the works involves the replacement of the sign panel or lamps.

- (ii) However, where the sign box is replaced as a whole, the airport operator must adhere to the latest standards on the date which the sign is returned to service at the affected location.
- (iii) Also, where the sign box under replacement is a mandatory instruction sign, the sign installation, including the mandatory instruction sign on the opposite side of the hold position must adhere to the latest standards on the date which the sign is returned to service, at the affected hold location. This would include the installation of mandatory signage on both sides of the hold position where required by the latest standards.
- (e) NAVAID building (e.g. glide path shelter).
  - (i) It is recognized that the placement of the glide path shelters in proximity of the transmitting antenna is due to the technical limitations associated with the overall installation and therefore the glide path shelter is deemed to be part of the Fixed by Function NAVAID installation.
  - (ii) However, as these shelters undergo life cycle replacement, the airport operator must adhere to the latest standards for frangibility of the shelters with materials that minimize the hazard to operations, such as with a fibreglass shell.

#### **4.1 Level of Service or Critical Aircraft Changes**

- (1) Improvements to the Level of Service affecting any part of the movement area (e.g. Upgrade from Non-Instrument to Non-Precision, Non-Precision to Precision, or operating visibility) or change of the critical aircraft affects the Obstacle Limitation and Identification Surfaces, as applicable, and all of the associated standards, such as strip and graded portion dimensions, signage, lighting, etc.
  - (a) Where a runway is subject to an improvement of level of service, the airport operator must adhere to all of the latest obstacle limitation and identification surfaces, as applicable, and runway strip standards, graded area amongst other requirements associated with the change for that particular runway;
  - (b) Where a taxiway is subject to an improvement of level of service, the airport operator must adhere to all of the latest standards including strip and graded area dimensions, amongst other requirements associated with the change for that particular taxiway.
  - (c) Where an apron is subject to an improvement to the operating visibility minimums (lower visibility), such as for low visibility operations, the airport operator must adhere to all of the latest standards associated with the change for that particular apron.

#### **4.2 Introduction of Take-off Surface, and Clearway Slope changes in TP 312 5<sup>th</sup> edition**

- (1) With respect to the Take-off surface introduced in TP 312 5<sup>th</sup> edition, airport operators are advised that CAR 302.07 allows surfaces established in accordance with TP 312 4<sup>th</sup> edition to remain as initially certified until there is a change implemented to the affected runway level of service or critical aircraft.

However, the introduction of the Take-off surface in TP 312 5<sup>th</sup> edition is to address the current situation with TP 312 4<sup>th</sup> edition in that there is no obstacle limitation slope associated with take-off operations towards the displaced portion of a runway. Also, there is no information being provided to aircrews about the location, type, or height of the obstacle that resulted in the establishment of the displacement. As the objective of TP312 is to provide an operating environment based on recognized safety parameters, the introduction of the Take-off surface in TP 312 5<sup>th</sup> edition, linked to the declared TODA, provides for a standard climb profile that is clear

of obstacles and is compatible with the performance characteristics defined as part of the aircraft certification process. Therefore, consideration should be given to implement these changes.

- (2) With respect to the Clearway slope changes and its association with Take-off surface in TP 312 5<sup>th</sup> edition, airport operators are advised that CAR 302.07 allows the clearways established in accordance with TP 312 4<sup>th</sup> edition to remain as initially certified until there is a change implemented to the affected runway length, level of service, or critical aircraft.

However, the current clearway application in Canada allows for the clearway to extend up to the first upstanding obstacle (max length of 300m) and no information is provided to aircrews that they are flying towards an obstacle without any possibility of transitioning to a standard climb profile at the end of the published clearway length (TODA). As the objective of TP312 is to provide an operating environment based on recognized safety parameters, the change to the clearway standards in TP 312 5<sup>th</sup> provides for a transition to a standard climb profile that is clear of obstacles and is compatible with the performance characteristics defined as part of the aircraft certification process. Therefore, consideration should be given to implement these changes.

## **5.0 INFORMATION MANAGEMENT**

- (1) Not applicable.

## **6.0 DOCUMENT HISTORY**

- (1) Not applicable.

## **7.0 CONTACT OFFICE**

For more information, please contact:

<http://www.tc.gc.ca/eng/regions.htm>

Suggestions for amendment to this document are invited, and should be submitted via:

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